DOCKETED	
Docket Number:	19-SPPE-03
Project Title:	Sequoia Data Center
TN #:	231455
Document Title:	Email - Sequoia Data Center Mitigation Measure language
Description:	CEC staff request for agreement by the applicant of mitigation measure language
Filer:	Steve Kerr
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/10/2020 3:59:58 PM
Docketed Date:	1/10/2020

From:	Payne, Leonidas@Energy
To:	Scott Galati
Subject:	Sequoia Mitigation Measure language
Date:	Friday, January 10, 2020 3:32:00 PM
Attachments:	5.4 Biological Resources Sequoia near final draft.pdf 5.7 Geology and Soils Sequoia near final draft.pdf MM changes additions for Sequoia Bio Geo.docx

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Scott:

Before a proposed mitigated negative declaration can be released for public review, California Environmental Quality Act (CEQA) requires that "[r]evisions in the project plans or proposals [are] made by *or agreed to* by the applicant" which avoid or mitigate all potentially significant effects (Cal. Code Regs., tit. 14, 15070(b)(1)). Once CEC staff and the applicant have found consensus on the proposed mitigation measures necessary for the determination of Mitigated Negative Declaration (MND), staff will ensure that the agreed-upon mitigation measures are incorporated into the Initial Study. Staff will publish the MND and Initial Study and submit them to the State Clearinghouse for a 30 day public review period.

In its Initial Study, CEC staff will be including four new mitigation measures in the technical area of Biological Resources (MM BIO-1 through 4) which would supersede Bio APMs 1 and 2, and a new mitigation measure (MM GEO-1) in the technical area of Geology and Soils which would supplement Geo APMs 1 and 2. Staff believes these measures are necessary to address potential impacts to burrowing owls and nesting birds, issues related to tree replacement, and impacts to potential paleontological resources. At this time, these are the only two technical areas where staff believes such mitigation language is necessary. We have attached near-final drafts of the relevant technical sections so you can see the mitigation language in context.

With this email, CEC staff seeks the applicant's acceptance of the attached mitigation measures for Biology and Geology. We will be docketing this email and the attachments. Please docket your response at your earliest convenience so we can reference your docketed response in our Initial Study. If this mitigation language is not acceptable, we will proceed with noticing a public workshop or phone call to resolve the language and seek agreement.

Leonidas Payne—Project Manager
California Energy Commission

Biological Resources:

APMs in Project Description (numbered via separate filing):

APM BIO-1: In order to reduce impacts to biological systems and communities, the following measures shall be implemented:

- Schedule tree removal activities between September 1 and January 31 (inclusive) to avoid the nesting season (including for raptors) and no additional surveys would be required.
- If construction tree removal would take place between February 1 and August 31, pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed.
- Surveys will be completed no more than seven days prior to the initiation of site clearing or construction activities. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the construction area for nests.
- If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist will determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50-100 feet for other species). This will ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation.
- A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the Planning Department prior to the start of construction.

APM BIO-2: The following pre-construction and construction period measures shall be undertaken to avoid impacts to sensitive wildlife species:

- A qualified biologist shall conduct preconstruction surveys for burrowing owls prior to construction. Should these surveys identify burrowing owls on or near the SDC [project] site, avoidance of disturbance to the burrow will be conducted as outlined below:
    - If an active burrowing owl nest is identified near a proposed work area, work will be conducted outside of the nesting season (March 15 to September 1).
    - If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a qualified biologist will establish a no-activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be 250-foot radius from the nest.
    - If burrowing owls are present within the construction footprint during the non-breeding period, a qualified biologist will establish a no-activity zone of at least 150 feet.

- If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

- Prior to construction, employees and contractors performing construction activities will receive environmental sensitivity training from a qualified wildlife biologist. Training will include review of environmental laws and avoidance and minimization measures that must be followed by all personnel to reduce or avoid effects on covered species during construction activities. A brief presentation by a qualified wildlife biologist will explain potential wildlife concerns to contractors, their employees, and agency personnel involved in project construction. Fact sheets conveying this information and an educational brochure containing color photographs of burrowing owls will be prepared for distribution to the above-mentioned people and anyone else who may enter the SDC [project] site vicinity.

- Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.

Replace with:

MM BIO-1 Environmental Sensitivity Training for Avoidance of Biological Resource Impacts. The following pre-construction and construction period measures shall be undertaken to avoid impacts to sensitive wildlife species:

- Prior to construction, employees and contractors performing construction activities will receive environmental sensitivity training from a qualified wildlife biologist. Training will include review of environmental laws and avoidance and minimization measures that must be followed by all personnel to reduce or avoid effects on special-status species, including birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, during construction activities. A brief presentation by a qualified wildlife biologist will explain potential wildlife concerns to contractors, their employees, and agency personnel involved in project construction. The training will include information on situations when it is necessary to contact a qualified biologist (e.g., should any sensitive biological resources such as an active nest be found during construction). Fact sheets conveying this information and an educational brochure containing color photographs of western burrowing owls will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. A record of all trained

personnel will be kept on site, and a sticker indicating training completion will be worn on all worker hard hats.

- Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the special-status species, including birds protected under the MBTA and California Fish and Game Code, and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.

MM BIO-2. Western Burrowing Owl Avoidance and Minimization Measures (Supersedes APM BIO-2). The following pre-construction and construction period measures shall be undertaken to avoid impacts to western burrowing owl:

- A qualified wildlife biologist shall conduct preconstruction surveys of the entire project site, plus all accessible areas of suitable habitat within a 250-foot radius from the project footprint for burrowing owls prior to construction. Surveys shall follow the most recent California Department of Fish and Wildlife (CDFW) recommendations currently found in Appendix D of the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation. The final survey shall be conducted within the 24-hour period prior to the initiation of project activities in any given area. Should these surveys identify burrowing owls on or near the project site, avoidance of disturbance to the burrow will be conducted as outlined below:
    - If an active burrowing owl burrow (including burrow surrogates) is identified near a proposed work area, work will be conducted outside of the breeding season (February 1–August 31).
    - If an active nest is identified near a proposed work area and work cannot be conducted outside of the breeding season, a qualified biologist will establish a no activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be a 250-foot radius from the burrow (including burrow surrogates).
    - If burrowing owls are present within the construction footprint during the non-breeding period (September 1–January 31), a qualified biologist will establish a no-activity zone of at least 150 feet around the occupied burrow(s) (including burrow surrogates).
    - The applicable buffer zone will be marked in the field with exclusion fencing and no construction activities, tree removal, or vegetation clearing shall occur within the buffer zone.
    - If monitoring by a qualified biologist indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced prior to August 31, in consultation with CDFW.
    - A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed.
    - If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the

sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls. The plan shall be approved by the city of Santa Clara in consultation with CDFW.

- If pre-construction surveys are conducted during the non-breeding season (September 1 through January 31) and burrowing owls are observed on the site, burrows may be removed only if the owls are properly passively relocated following CDFW guidelines. Passive relocation, using one-way doors, may only occur in accordance with an approved Burrowing Owl Exclusion Plan (BOEP). The plan shall be approved by the city of Santa Clara in consultation with CDFW.
- Loss of occupied burrowing owl burrows will be mitigated offsite at a 3:1 ratio. A mitigation plan shall be included as part of the BOEP and shall be approved by the city of Santa Clara in consultation with CDFW.

MM BIO-3: Nesting Bird Avoidance and Minimization Measures. (Supersedes APM BIO-1). In order to reduce impacts to nesting birds the following measures shall be implemented:

- Avoidance of Nesting Bird Season. Schedule construction activities, including tree removal, between September 1 and January 31 (inclusive) to avoid the nesting season (including for raptors). The nesting season for most birds, including most raptors, in the San Francisco Bay Area extends from February 1 through August 31.
- Pre-construction/Pre-disturbance Surveys for Nesting Birds. If it is not possible to schedule construction and tree removal between September and January, then pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests shall be disturbed during project implementation. This survey shall be completed no more than 7 days prior to the initiation of grading, tree removal, or other demolition or construction activities during the breeding season.
- During this survey, the ornithologist shall inspect all trees and other possible nesting habitats within and immediately adjacent to the construction area for nests.
- If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest (typically 250 feet for raptors and 50 to 100 feet for other species) to ensure that nests of bird species protected by the MBTA or Fish and Game code shall not be disturbed during project construction.
- In order to determine the extent of the construction-free buffer zone, the ornithologist shall document pre-construction baseline monitoring of the nest to characterize "normal" bird behavior. The ornithologist shall monitor the nesting birds and shall increase the buffer if the ornithologist determines that the birds are showing signs of unusual or distressed behavior by project activities. Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest.

- If an active nest is found in a tree proposed for removal, tree removal shall be postponed until an ornithologist has determined that the young have fledged or the nest is no longer active due to predation or abandonment.
- A final report indicating the result of the survey and any designated buffer zones for nesting birds, including any protection measures, shall be submitted to the Director of Community Development prior to the start of ground disturbance, grading and/or tree removal.

MM BIO-4: Prior to issuance of building permits, the applicant shall submit a Tree Replacement Plan to the City Arborist and Community Development Department for review and approval. The Plan shall provide for equivalent replacement of any tree removed from the project site, as follows:

- The project sponsor shall replace removed trees at a 2:1 ratio within the project site. If 2:1 replacement is not feasible because of site constraints, the project sponsor may instead replace trees at a 1:1 ratio within the project site with approval from the Community Development Director if the tree is larger in size and an appropriate species. Tree species and sizes shall be reviewed and approved, as applicable, by the City arborist.
- The 24-inch box of a replacement tree may be increased to either a 36- inch box or a 48-inch box to supplement the on-site tree planting plan. If trees are replaced at a 1:1 ratio, the replacement trees shall have a 36- inch box.
- If the removed tree is considered a protected tree it shall have a replacement ratio of 2:1 with a 36- inch box.
- If approved by the Community Development Director, an alternative site, within a 2-mile radius of the project site, shall be identified for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. Alternative sites may include local parks, schools, and/or street frontages.

Geology and Soils:

APMs in Project Description (numbered via separate filing):

APM GEO-1: To reduce the risk of damage to the SDC and SBGF as a result of geologic conditions at and near the SDC site, all recommendations outlined in the site-specific geotechnical investigation performed by Kleinfelder in October 2018 will be incorporated into the SDC and SBGF. These measures have been designed and will be incorporated to reduce the risk of settlement, liquefaction, and damage from expansive soils to ensure that users of the project are not exposed to a significant safety risks as a result of the SDC and SBGF. These measures are listed in full in Appendix E (of the application). The mat slab foundation has been designed to CBC seismic standards.

APM GEO-2: A Worker Environmental Awareness Training Program will be implemented, which will provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction.

Supplement with the following additional measure:

MM GEO-1: If a fossil is found and determined by the approved paleontologist to be significant and avoidance is not feasible, the qualified paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

5.4 Biological Resources

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the Sequoia Data Center (SDC) and associated Sequoia Backup Generating Facility (SBGF), collectively "the project," with respect to biological resources that occur in the project area.

BIOLOGICAL RESOURCES Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.4.1 Setting

Existing Habitat

The proposed project would be located on an approximately 15-acre site within an industrial and commercial area in the city of Santa Clara, California. The property is zoned Heavy Industrial and was previously developed with a one-story recycled paperboard mill and warehouse. The adjacent properties consist of an Enterprise Rent-a-Car Facility to the north, a furniture warehouse to the south, Norman Y Mineta San Jose International Airport (SJC) to the east, and adjacent railroad tracks to the west (Sequoia 2019a). The site is currently vacant and undeveloped with most structures demolished since the closure of the paperboard mill in 2017. Ground cover includes paved access roads and unpaved areas with piles of demolition debris and material, including pipes, located in the center of the site (Sequoia 2019c). Mature trees and ornamental landscaping are located along De La Cruz Blvd to the east as well as the northern and western property boundaries.

There are no natural or sensitive habitats located on or adjacent to the site. The closest habitat is non-native annual grassland located at the SJC where western burrowing owls (*Athene cunicularia hypugaea*;

SSC[1]**),** are known to occur (CNDDB 2019). There are no waterways, wetlands, or other aquatic resources located on or adjacent to the site. The Guadalupe River is the nearest waterway, located approximately 0.6 mile northeast of the site. The river drains into the San Francisco Bay.

Special Status Species

Due to the disturbed state of the project site and ongoing disturbance and industrial activity from surrounding areas, the site does not provide habitat capable of supporting a diverse assemblage of wildlife. Most special-status plant and wildlife species are not expected to be present on the highly disturbed project site. Special-status species are plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. No special-status wildlife species were identified in the area during field surveys conducted by the applicant (Sequoia 2019c). However, western burrowing owl are known to occur as year-round residents at the SJC, located immediately east across De La Cruz Blvd (CNDDB 2019; Albion 1997). Potentially suitable burrows for western burrowing owl were observed on the project site during reconnaissance surveys by the applicant. Therefore, due to the proximity to a known population and presence of low quality habitat, there is a low potential for this species to occur on the site.

Species observed during CEC staff's site visit in September 2019 included a pair of northern mockingbirds (*Mimus polyglottos*). In addition, staff observed the multiple small mammal burrows,possibly created by California ground squirrel (*Otospermophilus beecheyi*), near mature landscape trees located along the eastern boundary of the site, which were also reported by the applicant. These burrow complexes are located in areas where the asphalt has been removed in conjunction with demolition of the former facility (Sequoia 2019c). Other urban adapted species such as western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), and lesser goldfinch (*Spinus psaltria*) may tolerate the conditions of disturbed habitats; however, none of these species were observed during the site visit. In addition, birds, including raptors (birds of prey), could use mature trees on the project site for nesting or as a roost. Raptors and other migratory birds are protected by the Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Section 703, et seq.).

Northern coastal salt marsh, located approximately 5 miles north, is known to support several special-status species of birds and mammals. This includes California Ridgway's rail (*Rallus obsoletus*; FE, SE, FP), salt marsh common yellowthroat (*Geothlypis trichas sinuosa;* SSC), Alameda song sparrow (*Melospiza melodia pusillula*; BCC, SSC), salt marsh wandering shrew (*Sorex vagrans halicoetes*; SSC), and salt marsh harvest mouse (*Reithrodontomys raviventris*; FE, SE). Northern coastal salt marsh is considered a sensitive habitat by the California Department of Fish and Wildlife and is included as a sensitive natural community in the California Natural Diversity Database (CNDDB 2019). This habitat occurs along margins of the San Francisco Bay in areas that are sheltered from excessive wave action (Mayer, K.E. and W.F. Laudenslayer, Jr. 1988) The nearest known occurrence of this habitat is located approximately 5 miles northwest of the proposed project.

Landscape Trees

[1] STATUS CODES: FT = Federally Threatened; FC = Federal Candidate; BBC = Bird of Conservation Concern (Federal); SE = State Endangered; SC = State Candidate; SSC = California Species of Special Concern; FP = Fully Protected (State);

Mature trees and ornamental landscaping are present on the project site along De La Cruz Blvd as well as along the northern and western property boundaries. A certified arborist conducted a survey and provided an inventory report of the trees that are on the proposed project site or on a neighboring property overhanging into the project site (Sequoia 2019b). There are 72 existing trees which consist of the following 14 species: African sumac (*Rhus lancea*), Brazilian pepper (*Schinus terebinthifolius*), Canary Island pine (*Pinus canariensis*), Chinese pistache (*Pistacia chinensis*), eucalyptus (*Eucalyptus* spp.), European olive (*Olea europaea*), evergreen ash (*Fraxinus uhdei*), Fremont cottonwood (*Populus fremontii*), holly oak (*Quercus ilex*), Hollywood juniper (*Juniperus chinensis*), Chinese flame tree (*Koelreuteria bipinnata*), Mexican fan palm (*Washintonia robusta*), strawberry tree (*Arbutus unedo*), and tanoak (*Notholithocarpus densiflorus*).

Regulatory Background

Federal

Endangered Species Act (16 U.S.C., § 1531 et seq., and 50 C.F.R., part 17.1 et seq.). The Endangered Species Act (ESA) of 1973 designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. "Take" of federally listed species as defined in the ESA is prohibited without incidental take authorization, which "Take" is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include significant habitat modification or degradation that directly results in death or injury to a listed wildlife species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 C.F.R., part 17.3). Take authorization may be obtained through Section 7 consultation (between federal agencies) or Section 10 Habitat Conservation Plan. The administering agencies are the United States Fish and Wildlife Service (USFWS), the National Oceanic Atmospheric Administration (NOAA), and National Marine Fisheries Service (NMFS).

Migratory Bird Treaty Act (16 U.S.C., §§ 703–711). The Migratory Bird Treaty Act (MBTA) makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird including nests with viable eggs). The administering agency is the USFWS.

Clean Water Act Sections 401 and 404 (33 U.S.C., § 1341 and 33 U.S.C., §§1251–1376). The Clean Water Act (CWA) requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the United States Army Corps of Engineers (USACE) to discharge dredged or fill material into waters of the United States, including wetlands. Section 401 requires a permit from the regional water quality control board for the discharge of pollutants. The administering agencies are the USACE and State Regional Water Quality Control Board.

State

California Endangered Species Act (Fish and G. Code, §§ 2050–2098). The California Endangered Species Act (CESA) of 1984 protects California's rare, threatened, and endangered species. CESA allows California Department of Fish and Wildlife (CDFW) to issue an incidental take permit for a species listed as candidate, threatened, or endangered only if that take is incidental to otherwise lawful activities and specific criteria are met. These criteria are listed in Title 14 of the California Code of Regulations, section 783.4 subdivisions, (a) and (b). For purposes of CESA, "take" means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and G. Code, § 86). The administering agency is CDFW.

Fully Protected Species (Fish and G. Code, §§ 3511, 4700, 5050, and 5515). These sections designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Cal. Code Regs., tit. 14, § 670.7). Incidental take of fully protected species may also be authorized in a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2835). The administering agency is CDFW.

Nest or Eggs (Fish and G. Code, § 3503). This section protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. The administering agency is CDFW.

Nest of Eggs of Falconiformes and Strigiformes (Fish and G. Code, § 3503.5). This section makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes and Strigiformes or to take, possess, or destroy the nest or eggs of any such bird. The administering agency is CDFW.

Migratory Birds (Fish and G. Code, § 3513). This section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds. The administering agency is CDFW.

Native Plant Protection Act (Fish and G. Code, § 1900 et seq.). The Native Plant Protection Act (NPPA) of 1977 designates state rare and endangered plants and provides specific protection measures for identified populations. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and, after properly notifying CDFW, for vegetation removal from canals, roads, and other sites; changes in land use; and in certain other situations. The administering agency is CDFW.

Local

City of Santa Clara 2010 – 2035 General Plan. The General Plan goals and policies that address the protection and preservation of the city's natural habitat and wildlife are described in Section 10 Environmental Quality (Chapter 5, *Goals and Policies*). The administering agency is the Planning Division of the city of Santa Clara. General Plan goals and policies applicable to the proposed project are as follows:

- 5.3.1-P10 Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the proposal to help increase the urban forest and minimize the heat island effect.

- 5.10.1-G1 Protect fish, wildlife and their habitats, including rare and endangered species.

- 5.10.1-P1 Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.

- 5.10.1-P3 Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.

- 5.10.1-P4 Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way.

- 5.10.1-P12 Encourage property owners and landscapers to use native plants and wildlife-compatible nonnative plants, when feasible.

Santa Clara City Code Chapter 12.35 Section 020. This section of the Santa Clara City Code specifies how to proceed with certain issues with trees and shrubs growing in the streets or public places. This includes addressing the removal, alteration, or damage to trees via trenching. Special authorization for removal or alteration is required for trees and shrubs growing in the streets or public places. The administering agency is the Streets Department in the Department of Public Works of the city of Santa Clara.

5.4.2 Environmental Impacts and Mitigation Measures

Applicant Proposed Measures

The applicant proposes to implement the following design measures (Applicant Proposed Measures or APM) as part of the project (Sequoia 2019a).

APM BIO-1: In order to reduce impacts to biological systems and communities, the following measures shall be implemented:

- Schedule tree removal activities between September 1 and January 31 (inclusive) to avoid the nesting season (including for raptors) and no additional surveys would be required.
- If construction tree removal would take place between February 1 and August 31, pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed.
- Surveys will be completed no more than seven days prior to the initiation of site clearing or construction activities. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., shrubs) in and immediately adjacent to the construction area for nests.
- If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist will determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50-100 feet for other species). This will ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation.
- A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the Planning Department prior to the start of construction.

APM BIO-2: The following pre-construction and construction period measures shall be undertaken to avoid impacts to sensitive wildlife species:

- A qualified biologist shall conduct preconstruction surveys for burrowing owls prior to construction. Should these surveys identify burrowing owls on or near the SDC [project] site, avoidance of disturbance to the burrow will be conducted as outlined below:

- If an active burrowing owl nest is identified near a proposed work area, work will be conducted outside of the nesting season (March 15 to September 1).
- If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a qualified biologist will establish a no-activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be 250-foot radius from the nest.
- If burrowing owls are present within the construction footprint during the non-breeding period, a qualified biologist will establish a no-activity zone of at least 150 feet.
- If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

- Prior to construction, employees and contractors performing construction activities will receive environmental sensitivity training from a qualified wildlife biologist. Training will include review of environmental laws and avoidance and minimization measures that must be followed by all personnel to reduce or avoid effects on covered species during construction activities. A brief presentation by a qualified wildlife biologist will explain potential wildlife concerns to contractors, their employees, and agency personnel involved in project construction. Fact sheets conveying this information and an educational brochure containing color photographs of burrowing owls will be prepared for distribution to the above-mentioned people and anyone else who may enter the SDC [project] site vicinity.
- Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The project site is paved and unpaved, disturbed, previously developed land that is surrounded by light industrial and office development. Land cover is mostly bare ground or gravel and vegetation is generally limited to the perimeter of the project site

and consists of mature landscape trees and shrubs as well as ruderal weedy species (Sequoia 2019c). Most rare, threatened, endangered, and sensitive plant and wildlife species are not expected to occur on the site because the site does not contain suitable habitat for most species (e.g., vernal pools, marsh, riparian, chaparral, coastal scrub, or serpentine soils) (CNDDB 2019). There is no designated or proposed critical habitat for federally-listed species in the project area. However, one special-status wildlife species, western burrowing owl, is known to occur in close proximity at the San Jose International Airport (SJC). In addition, existing mature trees on and near the project site provide potential nesting habitat and food sources for bird species, including raptors (birds of prey) and other migratory birds, protected by the Migratory Bird Treaty Act (MBTA) and Sections 3503 and 3503.5 of the California Fish and Game Code.

Western Burrowing Owl

The *Burrowing Owl Management Plan San Jose International Airport* (Albion 1997) documents western burrowing owl habitat as occurring in areas between and adjacent to the taxiways and runways (infields) which are nearly flat and contain grasses and other herbaceous vegetation with most owls documented in the northern and western areas of the SJC, near De La Cruz Blvd (Albion 1997). Western burrowing owl are known to occur as year-round residents (breeding and non-breeding season) and utilize both natural and artificial burrows for breeding on the SJC. Since 2014, this population has seen a steady decline based on the results of surveys done for burrowing owls in Santa Clara County in relation to the Santa Clara Valley Habitat Plan (SCVHP). In 2014 there were 35 adults and 34 chicks; in 2019 there were 4 adults and 11 chicks (Garrison pers comm 2019a). Surveys conducted in October 2019 by SJC biologists detected 3 owls on the western side of the SJC (Chow pers comm 2019). Impacts to this community include potential direct impacts to burrowing owls from airport-related construction activities and loss of habitat from planned airport expansions (City of San Jose 2018).

Western burrowing owl have a low potential to occur in the project area due to the disturbed nature of the site and lack of herbaceous ground cover. Potential burrows were detected on the far eastern side of the project site where California ground squirrels were observed in ornamental plantings adjacent to the former parking lot. These burrow complexes are located in areas where the asphalt has been removed in conjunction with demolition of the former facility (Sequoia 2019c). Additionally, old ground squirrel burrows (collapsed) were observed along the western edge of the site adjacent to the railroad tracks and pipes of sufficient size (surrogate burrows) for burrowing owl were observed on site in debris piles along with other demolition debris (Sequoia 2019c). The site has recently been cleared of most structures and the pavement has largely been removed leaving bare ground and gravel which could provide marginal foraging habitat for this species, especially if there is a lapse in human activity on site. This species could occur as transient or dispersing individuals during the wintering or breeding season due to proximity to the SJC as well as the presence of small mammal burrows and burrow surrogates, which includes pipes and demolition debris. (Sequoia 2019c). Direct impacts to this species from project construction include loss of burrows, crushing of nests and eggs by construction equipment, and loss of individual birds if present on the project site. These would be significant impacts.

The applicant incorporated mitigation measures into the project design and proposed to implement "project design measures" (**APM BIO-2)**, which included conducting pre-construction surveys during the nesting season and non-breeding period, establishing buffers to avoid disturbance of western burrowing owl, and preparing a site-specific plan if an effective no-activity zone cannot be established.

APM BIO-2 also would require that all construction personnel participate in an environmental awareness program designed to provide information and training regarding covered species.

APM BIO-2 would not reduce construction impacts to a less-than-significant level because it does not fully address what should be included in a robust environmental awareness program for employees**. APM BIO-2** did not specifically state that birds protected under the MBTA and California Fish and Game Code, which have the potential to occur on the project site, would be covered in the training. **APM BIO-2** also refers to "covered species", which typically is defined as species covered under a Habitat Conservation Plan (HCP) for incidental take. In addition, **APM BIO-2** did not state how the project applicant would document who has completed the training or provide instructions for employees to contact a qualified biologist should any sensitive biological resources be found during construction. **Mitigation Measure (MM) BIO-1**, which would supersede **APM BIO-2,** would include additional requirements to cover all birds protected under the MBTA and California Fish and Game Code, in addition to western burrowing owl, in the environmental sensitivity training as well as more details regarding the components of the training program. **MM BIO-1** would also provide clarification that all special-status species, including rare, threatened, endangered, and sensitive plant and wildlife species, potentially occurring on site would be covered by the training.

In addition, **APM BIO-2** would not reduce potential construction impacts to a less-than-significant level because it does not fully address measures required to avoid impacts to western burrowing owl. **APM BIO-2** did not include coordination with CDFW, the Trustee Agency for fish and wildlife resources, on development of a site-specific plan to establish no-activity buffers. In addition, **APM BIO-2** did not state how the project applicant would mitigate for loss of occupied burrows if destroyed during construction of the proposed project or how the project applicant would address exclusion of owls from burrows on site during the non-breeding season. **MM BIO-2**, which would supersede **APM BIO-2**,) would include additional requirements, developed based on coordination with CDFW (Garrison pers comm 2019a), including development of a site-specific plan to minimize effects on the reproductive success of the owls, development of a mitigation plan for loss of occupied burrowing owl burrows, and development of a Burrowing Owl Exclusion Plan for placement of one-way doors—all in coordination with CDFW—to fully address potential impacts to western burrowing owl.

Implementation of **MM BIO-1** and **MM BIO-2** discussed below and agreed to by the project applicant (citation needed) would reduce potential impacts to special-status species, including nesting birds and western burrowing owl, resulting from implementation of the proposed project. Impacts would be less than significant with mitigation incorporated.

MM BIO-1 Environmental Sensitivity Training for Avoidance of Biological Resource Impacts. The following pre-construction and construction period measures shall be undertaken to avoid impacts to sensitive wildlife species:

- Prior to construction, employees and contractors performing construction activities will receive environmental sensitivity training from a qualified wildlife biologist. Training will include review of environmental laws and avoidance and minimization measures that must be followed by all personnel to reduce or avoid effects on special-status species, including birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, during construction activities. A brief presentation by a qualified wildlife biologist will explain potential wildlife concerns to contractors, their employees, and agency personnel involved in project construction. The training will include information on situations when it is necessary to contact a qualified

biologist (e.g., should any sensitive biological resources such as an active nest be found during construction). Fact sheets conveying this information and an educational brochure containing color photographs of western burrowing owls will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. A record of all trained personnel will be kept on site, and a sticker indicating training completion will be worn on all worker hard hats.

- Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the special-status species, including birds protected under the MBTA and California Fish and Game Code, and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.

MM BIO-2. Western Burrowing Owl Avoidance and Minimization Measures (Supersedes APM BIO-2). The following pre-construction and construction period measures shall be undertaken to avoid impacts to western burrowing owl:

- A qualified wildlife biologist shall conduct preconstruction surveys of the entire project site, plus all accessible areas of suitable habitat within a 250-foot radius from the project footprint for burrowing owls prior to construction. Surveys shall follow the most recent California Department of Fish and Wildlife (CDFW) recommendations currently found in Appendix D of the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation. The final survey shall be conducted within the 24-hour period prior to the initiation of project activities in any given area. Should these surveys identify burrowing owls on or near the project site, avoidance of disturbance to the burrow will be conducted as outlined below:
    - If an active burrowing owl burrow (including burrow surrogates) is identified near a proposed work area, work will be conducted outside of the breeding season (February 1–August 31).
    - If an active nest is identified near a proposed work area and work cannot be conducted outside of the breeding season, a qualified biologist will establish a no activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be a 250-foot radius from the burrow (including burrow surrogates).
    - If burrowing owls are present within the construction footprint during the non-breeding period (September 1–January 31), a qualified biologist will establish a no-activity zone of at least 150 feet around the occupied burrow(s) (including burrow surrogates).
    - The applicable buffer zone will be marked in the field with exclusion fencing and no construction activities, tree removal, or vegetation clearing shall occur within the buffer zone.
    - If monitoring by a qualified biologist indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced prior to August 31, in consultation with CDFW.
    - A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed.

- If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls. The plan shall be approved by the city of Santa Clara in consultation with CDFW.
- If pre-construction surveys are conducted during the non-breeding season (September 1 through January 31) and burrowing owls are observed on the site, burrows may be removed only if the owls are properly passively relocated following CDFW guidelines. Passive relocation, using one-way doors, may only occur in accordance with an approved Burrowing Owl Exclusion Plan (BOEP). The plan shall be approved by the city of Santa Clara in consultation with CDFW.
- Loss of occupied burrowing owl burrows will be mitigated offsite at a 3:1 ratio. A mitigation plan shall be included as part of the BOEP and shall be approved by the city of Santa Clara in consultation with CDFW.

Nesting Birds

Tree removal associated with project implementation could result in direct destruction of active nests of protected birds and raptors protected if tree removal occurs during the nesting season (generally defined as February 15 to September 15). Project construction could also result in indirect disturbance of nesting birds on or near the project site causing nest abandonment by the adults and mortality of chicks and eggs. Destruction of active bird nests, nest abandonment and/or loss of reproductive effort caused by disturbance are considered "take" by the CDFW, and therefore would be a significant impact.

The applicant incorporated mitigation measures into the project design and proposed to implement "project design measures" (**APM BIO-1)** which would attempt to conduct tree removal outside the nesting period, conduct pre-construction surveys if tree removal occurs during the nesting period, and establish buffers to avoid disturbance of nesting birds if active nests are detected in the trees proposed for removal. **APM-BIO-1** would not reduce construction impacts to a less-than-significant level because it only includes a requirement for pre-construction surveys for tree removal; however other construction activities, such as site clearing and grading, that are initiated during the breeding season have the potential to disturb nesting birds. In addition, **APM BIO-1** does not include requirements to consult with CDFW, the Trustee Agency for fish and wildlife resources, to determine the extent of a construction-free buffer zone to ensure that nests are not disturbed during project construction. **MM BIO-3**, which would supersede **APM BIO-1**, would include additional requirements, based on standard language applied to projects in CEQA documents prepared for the City of Santa Clara and recommendations from CDFW staff, to conduct nesting bird surveys prior to initiation of any type of construction activities, develop buffers based on pre-construction baseline monitoring of the nest, and for the ornithologist to consult with CDFW on the extent of construction-free buffer zone (Garrison pers comm 2019a). In addition, **MM BIO-3** specifies that tree removal shall not occur in any tree with an active nest until the ornithologist has determined that the young have fledged or the nest is no longer active due to predation or abandonment.

Implementation of **MM BIO-3** discussed below and agreed to by the project applicant (citation needed) would reduce potential impacts to protected raptors and other migratory birds resulting from implementation of the proposed project. Impacts would be less than significant with mitigation incorporated.

MM BIO-3: Nesting Bird Avoidance and Minimization Measures. (Supersedes APM BIO-1). In order to reduce impacts to nesting birds the following measures shall be implemented:

- Avoidance of Nesting Bird Season. Schedule construction activities, including tree removal, between September 1 and January 31 (inclusive) to avoid the nesting season (including for raptors). The nesting season for most birds, including most raptors, in the San Francisco Bay Area extends from February 1 through August 31.
- Pre-construction/Pre-disturbance Surveys for Nesting Birds. If it is not possible to schedule construction and tree removal between September and January, then pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests shall be disturbed during project implementation. This survey shall be completed no more than 7 days prior to the initiation of grading, tree removal, or other demolition or construction activities during the breeding season.
- During this survey, the ornithologist shall inspect all trees and other possible nesting habitats within and immediately adjacent to the construction area for nests.
- If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest (typically 250 feet for raptors and 50 to 100 feet for other species) to ensure that nests of bird species protected by the MBTA or Fish and Game code shall not be disturbed during project construction.
- In order to determine the extent of the construction-free buffer zone, the ornithologist shall document pre-construction baseline monitoring of the nest to characterize "normal" bird behavior. The ornithologist shall monitor the nesting birds and shall increase the buffer if the ornithologist determines that the birds are showing signs of unusual or distressed behavior by project activities. Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest.
- If an active nest is found in a tree proposed for removal, tree removal shall be postponed until an ornithologist has determined that the young have fledged or the nest is no longer active due to predation or abandonment.
- A final report indicating the result of the survey and any designated buffer zones for nesting birds, including any protection measures, shall be submitted to the Director of Community Development prior to the start of ground disturbance, grading and/or tree removal.

Operation and Maintenance

LESS THAN SIGNIFICANT. Operation and maintenance activities, such as landscape and irrigation maintenance, are expected to result in the same level of human presence and disturbance as typical nearby landscape and irrigation maintenance activities. The proposed project would have 54, 2.25-MW diesel fired backup generators with maximum load 96.5 MW for the SDC building. Operation of

the project's backup diesel generators would result in emissions of oxides of nitrogen (NOx). Nitrogen deposition is defined as the input of nitrogen oxide (NO_X) and ammonia (NH_3) derived pollutants, primarily nitric acid (HNO_3), from the atmosphere to the biosphere. The sources of these pollutants are primarily vehicle and industrial emissions, including power generation. Increased nitrogen deposition in nitrogen poor habitat allows the proliferation of non-native species which crowds out the native species (Fenn et al. 2003; Weiss 2006). Threats to sensitive species habitat from noxious weeds are exacerbated by nitrogen fertilization and the deposition of additional nitrogen in an already stressed ecosystem would be a potentially significant indirect impact.

Staff considered protected areas and designated critical habitat within the 6-mile radius around the proposed project in the analysis of nitrogen deposition from the proposed project. It has been staff's experience that by the time the plume has traveled this distance, in-plume concentrations become indistinguishable from background concentrations. Further, staff considered habitat modification to protected areas and designated critical habitat to be a potentially significant effect if these communities were known to be sensitive to nitrogen deposition. There is no designated or proposed critical habitat for federally-listed species within 6 miles of the project area. Northern coastal salt marsh located in the Guadalupe Slough near the San Francisco Bay Trail, is the only protected area, within 6 miles of the project, known to be sensitive to nitrogen deposition. Several special-status species are known to occur in this area of northern coastal salt marsh habitat (CNDDB 2019). Northern coastal salt marsh is also considered a sensitive natural community by the CDFW and included in the California Natural Diversity Database (CNDDB 2019).

One approach for quantifying nitrogen deposition is through critical load, which is defined as the input of a pollutant below which no detrimental ecological effects occur over the long-term. Salt marsh habitat tends to have a higher critical load than other ecosystems due to its open nutrient cycles that are less affected by atmospheric deposition than other nitrogen loading sources (Pardo et. al. 2011, pg. 3071). Critical load for early successional salt marsh has been estimated to be in the range of 30-40 kilograms nitrogen per hectare per year (kg N/ha/yr) (Bobbink et. al. 2010, pg. 21-22), and 50-100 kg N/ha/yr for intertidal wetlands and 63-400 kg N/ha/yr for intertidal salt marshes (Pardo et. al. 2011, pg. 3059). Staff used the conservative estimate of 30-40 kg N/ha/yr as the critical load for northern coastal salt marsh.

Impacts potentially could occur if the emissions from the proposed project in conjunction with baseline nitrogen deposition exceeded the critical load for the community. For a baseline nitrogen deposition estimate, staff used the Community Multiscale Air Quality (CMAQ) modeling system, which provides estimates of ozone, particulates, toxics, and acid deposition. Staff considered the most recent CMAQ-predicted value of 11.4 kg N/ha/yr from 2012 at northern coastal salt marsh habitat as the best available data to determine baseline nitrogen deposition (CMAQ 2019). Conservative modeling using AERMOD, performed by Energy Commission staff for similar facilities, estimate project contributions to existing nitrogen deposition to be between 0.01 and 0.03 kg N/ha/yr. The similar facilities include the McLaren Data Center (47, 2.75 MW diesel fired backup generators) and Laurelwood Data Center (56, 3.0-MW diesel fired backup generators). These facilities would be located at comparable distances (approximately 4 to 5 miles) from the northern coastal salt marsh habitat as the proposed project.

The project's estimated contribution (between 0.01 and 0.03 kg N/ha/yr) when added to the baseline nitrogen deposition value (11.4 kg N/ha/yr) at northern coastal salt marsh would be substantially below the critical load (30-40 kg N/ha/yr) for this habitat type. Operation of the proposed project

would not result in a substantial adverse effect from nitrogen deposition, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status. Therefore, this impact would be less than significant.

Required Mitigation Measures: MM BIO-1, MM BIO-2, MM BIO-3

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

NO IMPACT. The project site is paved and unpaved, disturbed, previously developed land that is surrounded by light industrial and office development. The land cover is mostly bare ground or gravel after removal of the existing pavement. Vegetation is generally limited to the perimeter of the project site and consists of landscape trees and ruderal weedy species. There are no riparian habitats or other sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS within the project site. There would be no impact.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. As stated above, no direct impacts would occur during operation or maintenance of the proposed project. However, staff also considered indirect impacts from nitrogen deposition resulting from operation of the proposed project as a potential impact on sensitive natural communities. Northern coastal salt marsh is the only sensitive natural community known to occur within 6 miles of the proposed project.

As stated previously, indirect impacts could potentially occur if emissions from the proposed project along the with the baseline nitrogen deposition exceeded the critical load for the sensitive natural community. Vegetation-specific critical loads for nitrogen deposition would not be exceeded at any location with northern coastal salt marsh. Therefore, operation of the proposed project would not result in a significant indirect impact to sensitive natural communities from nitrogen deposition. This impact would be less than significant.

Required Mitigation Measures: None.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

Construction/Operation and Maintenance

NO IMPACT. There are no state or federally protected wetlands within or adjacent to the project site. The closest aquatic feature to the project site is the Guadalupe River located approximately 0.6 mile east and separated from the site by a major roadway, De La Cruz Boulevard, and the SJC. There would be no impact during construction, operation, or maintenance of the proposed project.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Construction/Operation and Maintenance

NO IMPACT. There are no established wildlife corridors, such as rivers or streams, in the immediate project vicinity. The Guadalupe River, located approximately 0.6 mile east of the proposed project, is the closest corridor where movement or migration of native resident or migratory fish or wildlife species would likely occur. There are no known wildlife nursery sites, such as a rookery, fawning area, or fish spawning habitat, in the project area. Therefore, the project would have no impact during construction, operation, or maintenance.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As part of the project, the applicant proposes removal of 66 of the 72 trees documented as occurring on site or on a neighboring property overhanging into the project site (Sequoia 2019b and Sequoia 2019c). City of Santa Clara General Plan Conservation Policy 5.10.1-P4 protects all healthy cedars, redwoods, oaks, olives, bay laurel, and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way. The project proposes to remove several of the tree species cited in Policy 5.10.1-P4, which are in varying health condition. There are no trees to be removed that have a diameter greater than 36" at 48" above grade or diameter at breast height (dbh) or that would be classified as street trees. No heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan are present. All 72 trees are considered part of the urban forest under General Plan Policy 5.3.1-P10, which requires all removed trees, regardless of species, to be replaced at a minimum 2:1 ratio.

Conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance or tree replacement policies (for example, General Plan policies 5.10.1-P4 and 5.3.1-P10) would be a significant impact. General Plan Policy 5.3.1-P10 also calls for new development to provide street trees and conflict with this part of the policy would also be a significant impact. The City of Santa Clara does not have any further applicable tree protection policies, regulations, or ordinances. The following is a summary of the mitigation requirements for project-related impacts to existing trees:

- Four trees proposed for removal are protected species under Policy 5.10.1-P4 —two holly oak (*Quercus ilex*) (Tree ID 108 and 120) and two Brazilian pepper (*Schinus terebinthifolius*) (Tree ID 110 and 142). These trees are healthy, in fair to good health, and were recommended to be preserved in the applicant's arborist report. The replacement ratio for these trees is 2:1 with 36" box trees.

- Ten additional trees of species protected under General Plan Policy 5.10.1-P4 were recommended to be removed in the arborist report due to being in poor to fair health. These trees include two European olive (*Olea europaea*) (Tree ID 103 and 105), two holly oak (Tree ID 116 and 117), and six Brazilian pepper (Tree ID 148, 149, 150, 151, 152, and 154). Since these trees are part of the

urban forest, they must be replaced per the requirements of General Plan Policy 5.3.1-P10. The replacement ratio for these trees is 2:1 with 24" box tree or 1:1 with 36" box or bigger size tree.

- Fifty-two additional trees proposed for removal must be replaced under General Plan Policy 5.3.1-P10 because the trees (regardless of species) are part of the urban forest. The replacement ratio for these trees is 2:1 with 24" box tree or 1:1 with 36" box or bigger size tree.

- Six trees that are not proposed for removal include four holly oak (Tree ID 101, 170, 171, 172), one Canary Island pine (Tree ID 141), and one Mexican fan palm (Tree ID 166). Existing tree protection fencing and Tree Protection Zones are required to be established for all trees to be retained.

Removal of 66 trees would be a significant impact without adequate replacement trees planted as part of the proposed project. In addition, street trees would also be required to be planted as part of the proposed project. New landscaping is proposed to be planted around the perimeter of the site, along the street frontage, and near the building. The project applicant is proposing 114 trees to be planted on site with trees at 24" box size. Tree species are detailed in the proposed Landscape Construction Plan and include a mix of native and ornamental species (Sequoia 2019d). New trees are proposed to be planted along the street frontage of De La Cruz Boulevard to meet the requirements for street trees (Sequoia 2019b and Sequoia 2019d). In addition, existing tree protection fencing and Tree Protection Zones would be required to be established for all trees to be retained, as proposed on the Tree Removal and Protection Plan. The final Tree Removal and Protection Plan as well as the Landscape Construction Plan, including any potential off-site replacements, would be subject to review and approval by the City Community Development Department, and the project applicant would be required to receive authorization from the City prior to scheduling removal of City-protected trees.

The applicant did not propose adequate mitigation for impacts related to tree removal. The applicant has only proposed planting 114 trees on the site (Sequoia 2019d); however, at a 2:1 ratio, 132 trees would be required to be planted. The applicant stated that in addition to the 1:1 replacement on-site, the applicant would be required to work with the city of Santa Clara to achieve an acceptable replacement ratio either by increasing the replacement ratio on site, or by planting additional replacement trees off site (Sequoia 2019d). However, mitigation has not been defined in sufficient detail for tree replacement and therefore would not measurably reduce impacts to less than significant, nor ensure compliance with local policies or ordinances during project implementation. In addition, the applicant stated that the City's Municipal Code 12.35.020 provides for the permitting process for removal of protected trees; however, this is not an appropriate permit for tree removal on the project site as it only applies to trees and shrubs growing in the streets or public places. Therefore, this permit would not apply to the project.

MM BIO-4 would provide detailed requirements for the replacement of trees removed as part of the project and is a standard mitigation measure recommended by the city of Santa Clara (Kerachian pers comm 2019). Implementation of **MM BIO-4** discussed below and agreed to by the project applicant (citation needed) would reduce potential impacts to protected trees and the overall tree canopy in the city of Santa Clara resulting from implementation of the proposed project. Impacts would be less than significant with mitigation incorporated.

MM BIO-4: Prior to issuance of building permits, the applicant shall submit a Tree Replacement Plan

to the City Arborist and Community Development Department for review and approval. The Plan shall provide for equivalent replacement of any tree removed from the project site, as follows:

- The project sponsor shall replace removed trees at a 2:1 ratio within the project site. If 2:1 replacement is not feasible because of site constraints, the project sponsor may instead replace trees at a 1:1 ratio within the project site with approval from the Community Development Director if the tree is larger in size and an appropriate species. Tree species and sizes shall be reviewed and approved, as applicable, by the City arborist.
- The 24-inch box of a replacement tree may be increased to either a 36- inch box or a 48-inch box to supplement the on-site tree planting plan. If trees are replaced at a 1:1 ratio, the replacement trees shall have a 36- inch box.
- If the removed tree is considered a protected tree it shall have a replacement ratio of 2:1 with a 36- inch box.
- If approved by the Community Development Director, an alternative site, within a 2-mile radius of the project site, shall be identified for any additional tree planting necessary to satisfy the requirement to achieve a 2:1 replacement ratio. Alternative sites may include local parks, schools, and/or street frontages.

Operation and Maintenance

NO IMPACT. Tree removal or other activities that conflict with any local policies or ordinances protecting biological resources are not proposed to occur during operation and maintenance. Therefore, no impact would occur during operation or maintenance of the proposed project.

Required Mitigation Measures: MM BIO-4

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan?

Construction/Operation and Maintenance

NO IMPACT. The Santa Clara Valley Habitat Plan (SCVHP 2012) provides for the protection and recovery of resources for the majority of land in Santa Clara County, however the proposed project is not within the permitting area of this plan. There are no approved habitat conservation plans, natural community conservation plans, or other adopted plans that would apply to the proposed project. Therefore, there would be no impact during construction, operation, or maintenance of the proposed project.

5.4.3 References

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5.7 Geology and Soils

This section describes the environmental and regulatory setting and discusses impacts associated with the demolition, construction, and operation of the project with respect to geology and soils.

GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial direct or indirect risks to life or property?*	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

*Geology and Soils question (d) reflects the current 2013 California Building Code (CBC), effective January 1, 2014, which is based on the International Building Code (2009).

Environmental checklist established by CEQA Guidelines, Appendix G.

5.7.1 Setting

Analysis of existing data included reviews of publicly available literature, maps, air photos, and documents presented with the application. An online database search was performed to identify previously reported paleontological resources near the project site. The geologic map review of the project area included maps published by the U.S. Geological Survey (Helley and Wesling 1989; Wesling and Helley 1989, and Helley et al. 1994). The literature reviewed included published and unpublished scientific papers. A paleontological record search of the University of California Museum of Paleontology, Berkeley online paleontological database was conducted for the disturbed project areas, including a 10-mile buffer zone surrounding the proposed data center (UCMP 2019).

Paleontological Sensitivity

The potential for paleontological resources to occur in the project area was evaluated using the federal Potential Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource

management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential) or Unknown. This system is intended to aid in predicting, assessing, and mitigating impacts to paleontological resources. The PFYC ranking system is summarized in **Table 5.7-1**.

TABLE 5.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
1 Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 Low	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent aeolian deposits.
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.
3 Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered.
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including invertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently.
	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.

TABLE 5.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION	
BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
U Unknown	Geologic units that cannot receive an informed PFYC assignment.
	Geological units may exhibit features or preservation conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.
	Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

Source: Summarized and modified from BLM 2016

Regional Geologic Setting

The proposed project is situated in the Southern Coastal Ranges geomorphic province (**Figure 5.7-1**). The division between the Northern and Southern Coastal Ranges is one of convenience. Both provinces contain many elongate ranges and narrow valleys that are approximately parallel to the coast, although the coast trends slightly northward more than the ridges and valleys, except at San Francisco Bay where a pronounced gap separated the two provinces (Norris and Webb 1990). The differences between the two provinces occur because the northern Ranges lie east of the San Andreas Fault zone, whereas the southern Ranges predominantly lie to the west (Norris and Webb 1990). The two Ranges have dissimilar basement rocks. The Northern Range and portions of the Southern Range east of the San Andreas Fault zone are underlain by strongly deformed Franciscan subduction complex rocks, and the areas west of the San Andreas Fault zone, in both the Northern and Southern Range, are underlain by a strongly deformed granitic-metamorphic complex known as the Salinian block. The basement rock beneath the project site, which lies east of the San Andreas Fault zone consists of Franciscan Complex rocks (Norris and Webb 1990).

Local Geology

Figure 5.7-2 depicts the surficial geology in the vicinity of the project. The project site is in the Santa Clara Valley, a relatively broad and level alluvial basin, bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the west and southwest, and the Diablo Mountain Range to the east and southeast. The Santa Clara Valley's basin contains alluvial deposits derived from the Diablo Range and the Santa Cruz Mountains. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the north-central region. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area.

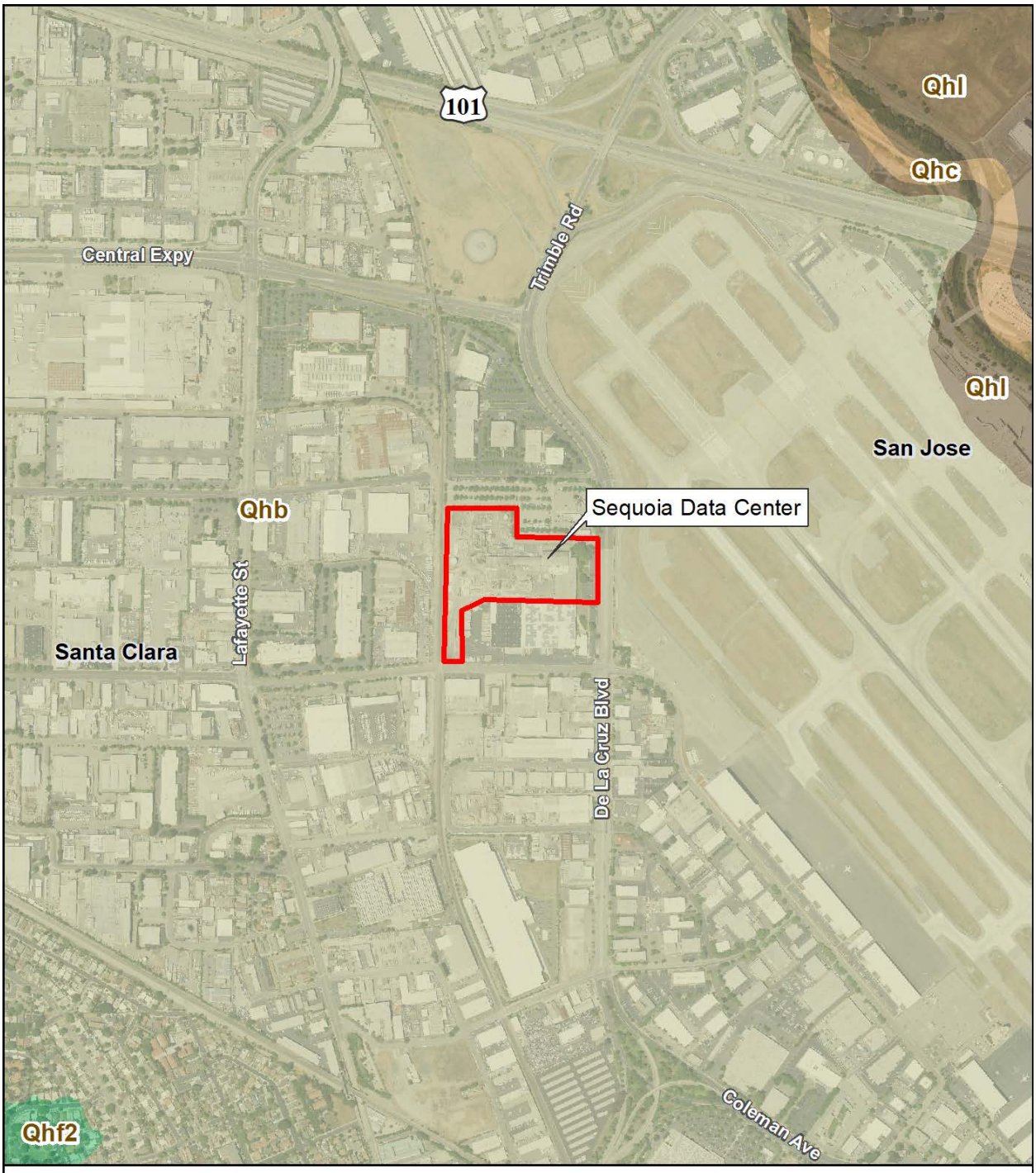
The majority of the project site is underlain by Holocene age (less than 11,000 years old) basin deposits (Qhb) (**Figure 5.7-2**). The basin deposits consist primarily of estuarine deposits of the Alameda Formation and younger alluvial fans. The uppermost layer of soil encountered at the site consists of roughly 4.5 feet of fill made up of lean clay with sand and clayey sand. Beneath the fill, there are alluvial soils including layers of clays with varying degrees of sand and fine to coarse gravel. Sands and gravels are generally medium dense in the upper 30-40 feet of the soil layers, while sands below this range tend to be dense to very dense (Sequoia 2019a).

Figure 5.7-1
Geomorphic Provinces

○ City/Town/Populated Place

E-Eureka	F-Fresno	N-Needles
R-Redding	B-Bakersfield	K-Kelso
S-Sacramento	SB-Santa Barbara	SD-San Diego
SF-San Francisco	LA-Los Angeles	
M-Monterey	PS-Palm Springs	

Sources: California Department of Conservation, California Geological Survey, 2002



Project Boundary

Geology

- Qhb: Floodbasin Deposits (Holocene)
- Qhc: Stream Channel Deposits (Holocene)
- Qhf2: Older Alluvial fan deposits (Holocene)
- Qhl: Natural Levee Deposits (Holocene)

0 1,000 2,000
Feet

Sources: USGS Open-File Report 98-795, NAIP Imagery 2016

Figure 5.7-2
Surficial Geology

In addition, these sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. However, these recent sediments overlie older, Pleistocene age sediments that have a high potential to contain paleontological resources. These older sediments, often found at depths of ten feet or more below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. The City of Santa Clara General Plan (Santa Clara 2010), on page 328, suggests that ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources in older Pleistocene sediments (Santa Clara 2010).

There are no unique geologic features on or adjacent to the project site. The topography of the project site is relatively flat with a slight downward slope to the northeast. The elevation across the site ranges from 41.5 feet (NAVD88) in the southwest portion of the site to 39 feet (NAVD88) in the northeast portion (Kleinfelder 2018). Erosion hazards are limited and there are no landslide hazards (**Figure 5.7-2**).

Groundwater

Ground water was encountered at depths ranging from approximately 10 to 10.5 feet below the current grade. Fluctuations in groundwater levels are common due to seasonal weather patterns, underground drainage patterns, regional fluctuations, and other factors (Sequoia 2019a).

Seismicity and Seismic Hazards

The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones of the San Andreas Fault system, which regionally trend in a northwesterly direction (**Figure 5.7-3**). Three of the major earthquake faults (the San Andreas Fault, the Hayward-Rogers Creek Fault, and the Calaveras Fault) that comprise the San Andreas Fault system extend through the Bay Area (CGS 2015). The Sequoia Data Center site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (known formerly as a Special Studies Zone), and there are no known active faults within the City limits of Santa Clara (Sequoia 2019a).

Figure 5.7-3 identifies the regional earthquake faults in the project vicinity. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates there is a 72 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area region between 2002 and 2032. Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances. The faults considered capable of generating significant earthquakes in the area are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The three major faults in the region are the Calaveras Fault (approximately 9.1 miles east of the site), the San Andreas Fault (approximately 11.6 miles west of the site), and the Hayward-Rogers Creek Fault (approximately 5.8 miles east of the site) (CGS 2010). Structural design of facilities in California are required to incorporate design features to ensure public safety if a seismic event generates sufficient ground motion to impact the structural integrity of the facility in accordance with California Building Code (CBC 2019).

Loose unsaturated sandy soils can settle during strong seismic shaking. However, the soils encountered below the design groundwater level at the site are predominantly clays, clayey sand, silty clay, gravels, and poorly graded sands (Kleinfelder 2018). Therefore, the potential for significant differential seismic settlement affecting the proposed project is presumed low.

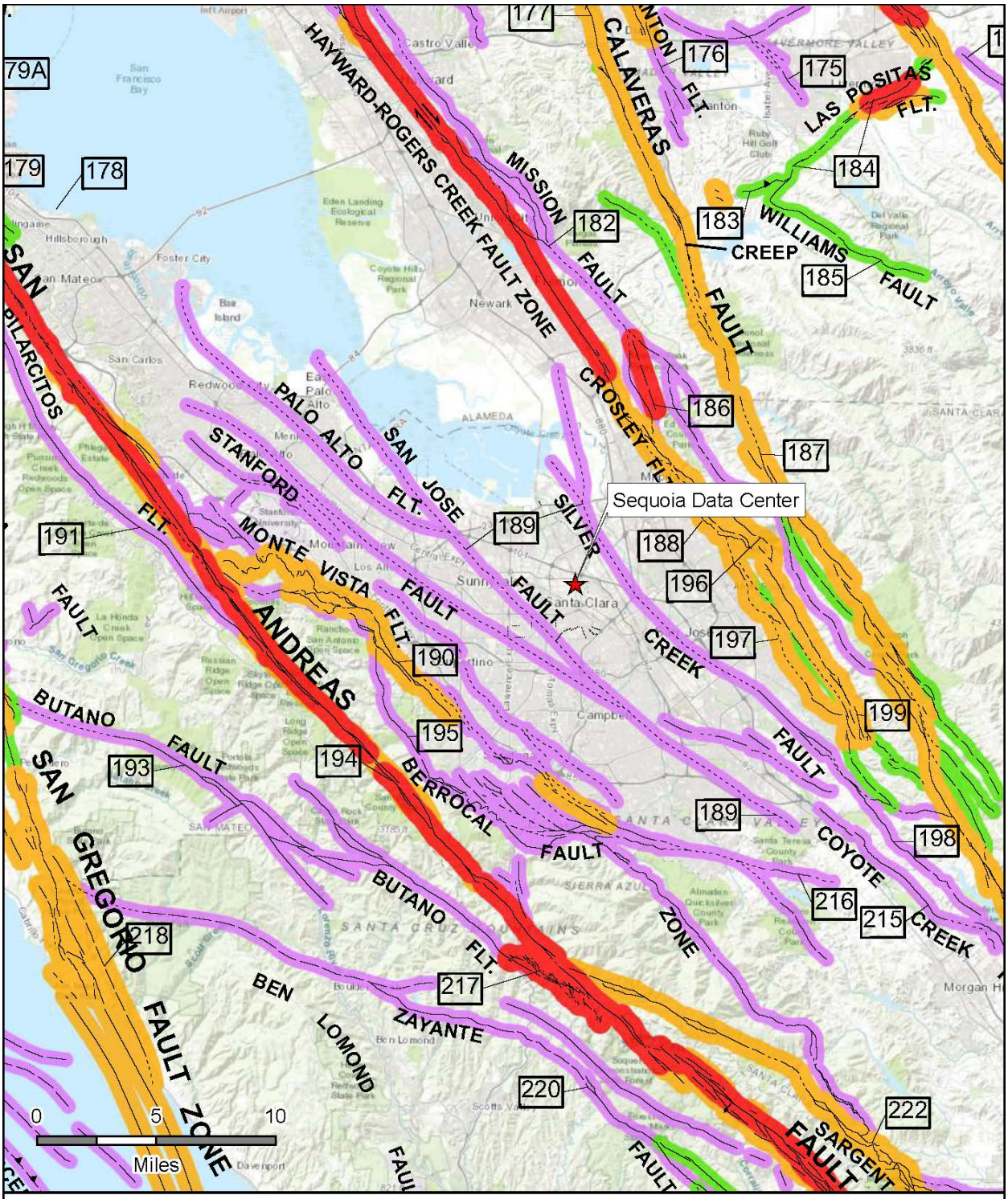


Figure 5.7-3
Regional Fault Map

Sources: California Department of Conservation 2010, ESRI, Jacobs 2019a

Soils

Figure 5.7-4 depicts the surficial soil units at and near the project site. Soil types in the area include clay in the low-lying central areas, loam and gravelly loam in the upper portions of the valley, and eroded rocky clay loam in the foothills. The soil at the site is classified as Urban Land by the U.S. Department of Agriculture (NRCS 2019). The average grade of the valley floor ranges from nearly horizontal to about two percent generally down to the northwest. Grades are steeper on the surrounding hillsides (Santa Clara 2011).

Two test borings were performed as part of the project-specific geotechnical report. One boring was completed to a depth of 120 feet and one boring to a depth of 48 feet. The uppermost layer of soil encountered at the site consists of roughly 4.5 feet of fill made up of lean clay with sand and clayey sand. Beneath the fill, there are alluvial soils including layers of clays with varying degrees of sand and fine to coarse gravel. Sands and gravels are generally medium dense in the upper 30-40 feet of the soil layers, while sands below this range tend to be dense to very dense. (Sequoia 2019b).

Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted during the rainy season expansive soil tends to swell, and when dried during the summer months the material shrinks. However, expansive soil can be mitigated through removal or mixing with non-expansive soil. Moderately expansive clayey soils were encountered near the ground surface throughout the site (Kleinfelder 2018). Soil expansion potential was characterized via laboratory testing of the near-surface soils during the geotechnical investigation of the site. Grading operations would remove much of this surficial material. Excavations at the site would reach a maximum depth of 13-feet for utility trenches, and surficial material removed from the site would be replaced with fill imported to the site (Sequoia 2019a).

Liquefaction

During strong ground shaking, loose, saturated, cohesionless soils can experience a temporary loss of shear strength and act as a fluid. This phenomenon is known as liquefaction. Liquefaction depends on the depth to water, grain size distribution, relative soil density, degree of saturation, and intensity and duration of the earthquake (Youd et al. 2001). The potential hazard associated with liquefaction is seismically induced settlement. The site is mapped within a State of California Seismic Hazard Zone for liquefaction. Areas mapped for this hazard have been impacted historically by liquefaction or display geologic or groundwater conditions conducive to liquefaction. Ground water was encountered at depths ranging from approximately 10 to 10.5 feet below the current grade (Sequoia 2019a). Proposed structures would be designed and constructed to account for this in accordance with the California Building Code (CBC 2019).

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally towards the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Generally, failure in this mode is analytically unpredictable because it is difficult to evaluate

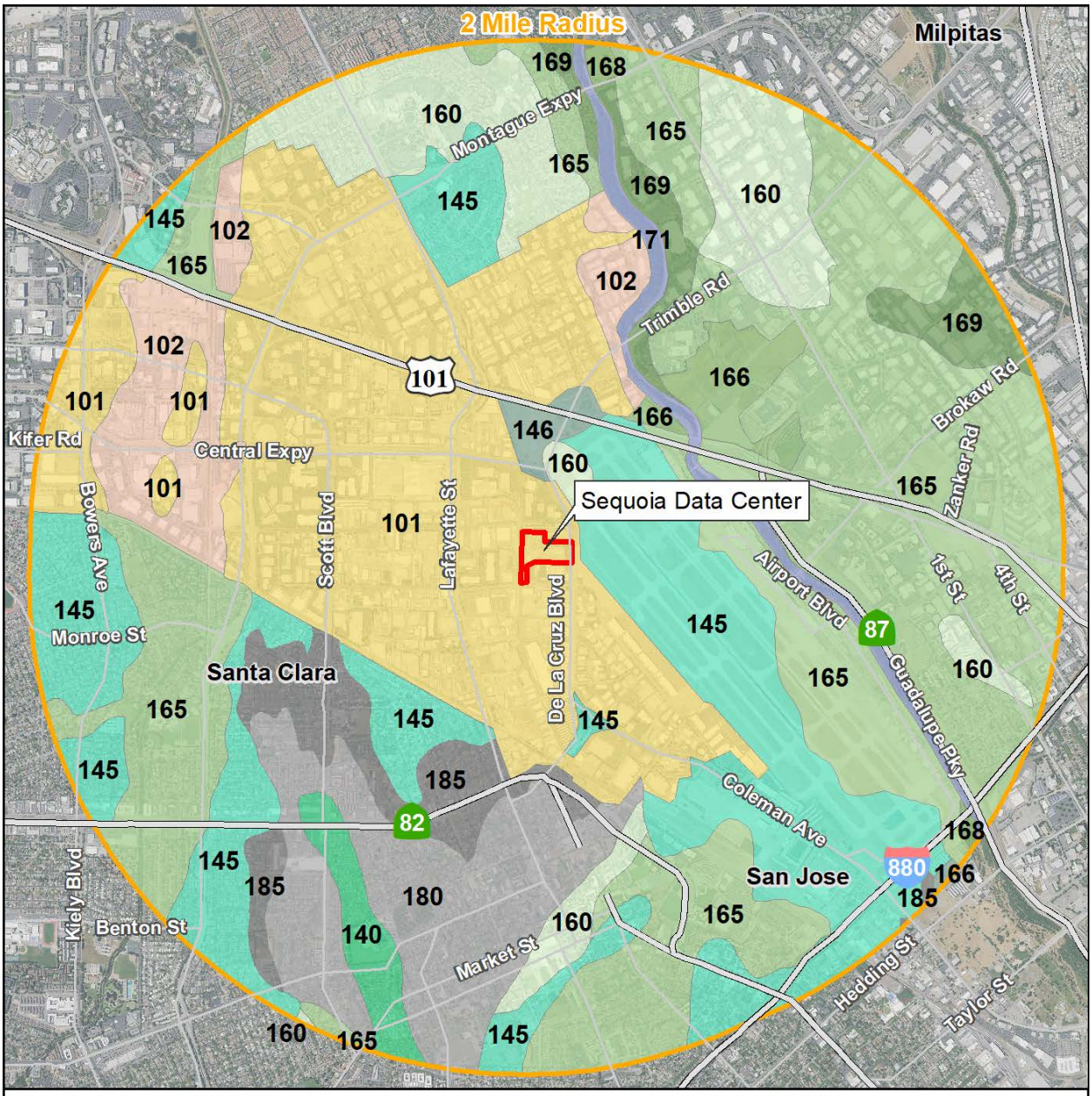


Figure 5.7-4
Surface Soil Map

where the first tension crack would occur. However, there are no stream channels on or adjacent to the site, therefore the project site would not be subject to lateral spreading (Sequoia 2019a).

Regulatory Background

The project would be required to obtain building permits that would be issued by the City of Santa Clara. The issuance of the building permits and oversight provided by the City of Santa Clara would ensure that the project complies with the applicable building codes.

Federal

There are no federal regulations related to geology and soils and paleontological resources that apply to this project.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed following the 1971 San Fernando earthquake. The act regulates development in California near known active faults due to hazards associated with surface fault ruptures. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction. Areas within an Alquist-Priolo Earthquake Fault Zone require special studies to evaluate the potential for surface rupture to ensure that no structures intended for human occupancy are constructed across an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code

The California Building Standards Code (CBC) prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years; the current version is the 2016 CBC.

California Division of Occupational Safety and Health Regulations

Excavation, shoring, and trenching activities during construction are subject to occupational safety standards for stabilization by the California Division of Occupational Safety and Health (Cal/OSHA) under Title 8 of the California Code of Regulations and Excavation Rules. These regulations minimize the potential for instability and collapse that could injure construction workers on the site.

State Paleontological Laws, Ordinances, Regulations, and Standards. Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These are valued for the information they yield about the history of the earth and its past ecological settings. The California Public Resources Code (Section 5097.5) specifies that unauthorized removal of a paleontological resource is a misdemeanor.

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a project and to make decisions based on the findings of those analyses. CEQA includes, in its definition of historical resources, any object or site that "has yielded, or may be likely to yield, information important in prehistory" (California Code Regulations, title 14, § 15064.5(a)(3)(D)), which is typically interpreted by professional scientists as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" may be a significant impact under CEQA (CEQA Guidelines Appendix G.VII. (f)).

Local

Local Paleontological Regulations. Staff reviewed the City of Santa Clara General Plan (Santa Clara 2010)) for provisions relevant to paleontological resources. Section 5.6.3 of the general plan identifies protection of paleontological resources as a goal of the city and policies 5.6.3-P1 through P6 outline how the protection of paleontological resources would be achieved.

- 5.6.3-G1 Protection and preservation of cultural resources, as well as archaeological and paleontological sites.
- 5.6.3-G2 Appropriate mitigation if human remains, archaeological resources or paleontological resources are discovered during construction activities.
- 5.6.3-P1 Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.
- 5.6.3-P2 Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.
- 5.6.3-P3 Consult with California Native American tribes prior to considering amendments to the City's General Plan.
- 5.6.3-P4 Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.
- 5.6.3-P5 In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.
- 5.6.3-P6 In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.

5.7.2 Environmental Impacts and Mitigation Measures

Applicant Proposed Mitigation Measures:

The applicant proposes to implement the following design measures (Applicant Proposed Measures or APM) as part of the project

APM GEO-1: To reduce the risk of damage to the SDC and SBGF as a result of geologic conditions at and near the SDC site, all recommendations outlined in the site-specific geotechnical investigation performed by Kleinfelder in October 2018 will be incorporated into the SDC and SBGF. These measures have been designed and will be incorporated to reduce the risk of settlement, liquefaction, and damage from expansive soils to ensure that users of the project are not exposed to a significant safety risks as a result of the SDC and SBGF. These measures are listed in full in Appendix E (of the SPPE application). The mat slab foundation has been designed to CBC seismic standards.

APM GEO-2: A Worker Environmental Awareness Training Program will be implemented, which will provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction.

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Demolition/Construction

NO IMPACT. The probability that demolition followed by construction of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during demolition or construction is remote. The project site is located within the seismically active San Francisco Bay region, and the nearest historically active fault, the Hayward-Rogers Creek Fault, is approximately 6.1 miles from the project site (**Figure 5.7-3**). No active or potentially active faults are known to pass directly beneath the site. Several potentially active faults have been mapped outside of the general project area, the closest being the Silver Creek fault, which is mapped approximately 1.9 miles southwest of the proposed project (**Figure 5.7-3**). Due to the distance of faults from the site and the absence of known faults within or near the site, development of the project would not expose people or buildings to known risks of fault rupture (Sequoia 2019a). Given this, the impact would be less than significant.

Operation and Maintenance

NO IMPACT. The probability that operation or maintenance of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during operation is remote. There are no mapped Alquist-Priolo Special Studies Zones for active faults crossing the project site (**Figure 5.7-3**). As described above, the zone of damage is limited to a relatively narrow area along either side of the fault. Therefore, no impacts related to fault rupture would occur.

ii) Strong seismic ground shaking?

Demolition/Construction

LESS THAN SIGNIFICANT IMPACT. Earthquakes along several nearby active faults in the region could cause moderate to strong ground shaking at the site (Sequoia 2019a). The intensity of ground motion and the damage done by ground shaking would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. The design of the project, including the building foundations, would assess potential impacts of strong seismic ground shaking. Seismic hazards would be minimized by conformance to the seismic design criteria of the 2019 California Building Code **(APM GEO-1)**. Furthermore, a project-specific geotechnical engineering report would be provided to the City Building Official for review and approval prior to issuance of a building permit. With implementation of the seismic design guidelines per the California Building Code (CBC 2019), as well as the anticipated project-specific recommendations in the final geotechnical engineering report **(APM GEO-1)**, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking, as the SDC and SBGF shall meet the design requirements of the current CBC.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. During operation and maintenance of the proposed project, the project facility would be subject to moderate to strong seismic ground shaking (Sequoia 2019a). However, with implementation of the seismic design guidelines per the California Building Code (CBC 2019), as well as the anticipated project-specific recommendations in the final geotechnical engineering report **(APM GEO-1)**, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant.

Required Mitigation Measures: None**.**

iii) Seismic-related ground failure, including liquefaction?

Demolition/Construction

LESS THAN SIGNIFICANT IMPACT. The site is located within a state-designated Liquefaction Hazard Zone. Soil tests conducted for the site have indicated that several layers could potentially experience liquefaction. In general, these liquefiable layers occur sporadically in discontinuous layers located between roughly 15 and 25 feet below existing grade at the site. The likely consequence of potential liquefaction at the site would be settlement. Total ground surface settlements on the order of 1-2 inches may result from liquefaction or ground softening after a seismic event (Kleinfelder 2018).

As previously mentioned, the project would be constructed in compliance with the 2019 CBC, including all applicable seismic standards for structures **(APM GEO-1)**. Compliance with the 2019 CBC reduces potential risks associated with settlement from seismically induced liquefaction. Additionally, mitigation has been incorporated into the design of the project to further reduce the risk of settlement from liquefaction. The mat slab foundation has been designed to CBC

seismic standards. This mitigation measure is described in Project Description section above, and is summarized below **(APM GEO-1)**:

> To reduce the risk of damage to the project as a result of geologic conditions at and near the project site, all recommendations outlined in the site-specific geotechnical investigation performed by Kleinfelder in October 2018 will be incorporated into the project. These measures have been designed and will be incorporated to reduce the risk of settlement, liquefaction, and damage from expansive soils to ensure that users of the project are not exposed to a significant safety risk as a result of the project.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. During operation and maintenance of the proposed project the project facility would be subject to moderate to strong seismic ground shaking (Sequoia 2019a). However, with implementation of seismic design guidelines per the California Building Code (CBC 2019), as well as the anticipated project-specific recommendations in the final geotechnical engineering report **(APM GEO-1)**, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking, including ground failure, liquefaction, or seismically induced subsidence. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant.

Required Mitigation Measures: None**.**

iv) Landslides?

Demolition/Construction

NO IMPACT. There would be no impact from landslides. The proposed project is located on very mildly sloping terrain and is not located in any of the areas subject to landslides as identified in the City of Santa Clara General Plan (Santa Clara 2011). Grading of the substation expansion would not create steep slopes and construction of the proposed project would not cause a landslide.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities would not materially change from existing activities and would not include construction or grading of new slopes. For these reasons, and because the project components are not located in areas subject to landslides as identified in the City of Santa Clara General Plan (Santa Clara 2010), no impact would occur.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Demolition/Construction

LESS THAN SIGNIFICANT IMPACT. Demolition of existing structures, foundations, and underground utilities would be necessary to make way for the project. Construction activities associated with the project would temporarily increase sedimentation and erosion by exposing soils to wind and runoff until construction is complete and new vegetation is established (Sequoia 2019a). As discussed in **Section 5.10, Hydrology and Water Quality**, the project is subject to construction-related storm water permit requirements. Prior to ground-disturbing construction activity, the project must comply with the Construction General Permit, which includes filing a Notice of Intent with the State Water Resources

Control Board. The project would be subject to the requirements of Provision C.3 of Santa Clara's National Pollutant Discharge Elimination System (NPDES) permit and would be required to comply with Santa Clara's BMPs for erosion and sedimentation control during the construction period, as outlined in the NPDES permit (Sequoia 2019a). When construction is complete, the project would file a Notice of Termination with the San Francisco Bay RWQCB, documenting that all elements to the SWPPP have been implemented.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. The project would be subject to a post-construction NPDES Permit and Provision C.3 requirements of Santa Clara's NPDES permit. BMP's for erosion and sedimentation control taken to comply with the NPDES permit would ensure the site would not include areas of exposed topsoil subject to erosion. Surface water runoff from the facility is not expected to impact soil erosion or cause the loss of topsoil during project operation. Occasional minor surface disturbance may continue to be required during maintenance activities but such disturbance would be temporary and small (Jacobs 2019a). Continuous operation and maintenance work would not result in increased erosion or topsoil loss and therefore, no significant impact associated with erosion or loss of topsoil would occur.

Required Mitigation Measures: None.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Demolition/Construction

LESS THAN SIGNIFICANT IMPACT. Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying alluvial material toward an open face, such as the steep bank of a stream channel or slopes. The project site is located in a mapped liquefaction hazard zone. The site is not located within a landslide hazard zone, and geomorphology of the site is such that the site would not be subject to lateral spreading. There are no stream channels or other open faces on or adjacent to the site that would be subject to lateral spreading.

Based on the site-specific geotechnical report, subsurface conditions at the project site are generally stable with a low potential for minor settlement (up to 2 inches) (Sequoia 2019b). The project would be designed and constructed in accordance with standard engineering safety techniques and in conformance with the requirements of applicable, current California Building Code (CBC 2019) **(APM GEO-1)**. The project would not change or exacerbate the geologic conditions of the project area and the project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Operation and Maintenance

LESS THAN SIGNIFICANT IMPACT. Operation and maintenance activities would not materially change the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities but such disturbance would be temporary and small. The project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Required Mitigation Measures: None.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial direct or indirect risks to life or property?

Demolition/Construction

LESS THAN SIGNIFICANT IMPACT. As discussed above in section **5.7.1 Setting**, expansive soil behavior is a condition where clay soils react to changes in moisture content by expanding or contracting. Poorly-drained soils have greater shrink-swell potential. This condition can be eliminated by ensuring slabs-on-grade have sufficient reinforcement and be supported on a layer of non-expansive soil, along with limiting moisture changes in the near-surface soils, among other design criteria.

Some of the soils encountered during geotechnical review were moderately expansive as defined in Section 1803.5.3 of the CBC (Kleinfelder 2018). The policies of the City of Santa Clara General Plan (Santa Clara 2010) have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. To avoid risks associated with expansive soils, foundation designs would be reviewed and approved by City engineers for compliance with the 2019 CBC general foundation design standards **(APM GEO-1)**. (Sequoia 2019a). Thus, the project would not create substantial direct or indirect risks to life or property as the SDC and SBGF shall meet the design requirements of the current CBC.

Operation and Maintenance

NO IMPACT. Operation and maintenance activities would not change materially the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and small. The project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Required Mitigation Measures: None.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Demolition/Construction

NO IMPACT. The project would connect to an existing city-provided sanitary sewer connection and would not require septic tanks (Sequoia 2019a). Therefore, there would be no impact to soils as a result of sanitary waste disposal from the project during construction.

Operation and Maintenance

NO IMPACT. The project would connect to an existing City-provided sanitary sewer connection and would not require septic tanks (Sequoia 2019a). Therefore, there would be no impact to soils as a result of sanitary waste disposal from the project during operation and maintenance.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Demolition/Construction

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The level of paleontological sensitivity at the project site is considered to be moderate. The project site is located in the Santa Clara Valley, an area known to have scientifically significant but widespread or intermittent fossil discoveries. Surficial sediment has been mapped as Holocene (11,700 years before present) and paleontological evidence indicates that Pleistocene (2.6 million to 11,700 years before present) sediments may also be present at or near the surface. Five fossil sites have been found at or near the ground surface within two miles of the project site, especially along stream beds. However, the general area has been extensively developed over the last 50 years as part of the technology research and development area known as Silicon Valley. The site has already been disturbed by prior, modern human occupation including excavation to a depth of 4 or 5 feet and the placement of fill material (Sequoia 2019a).

The potential to disturb paleontological resources would occur during the construction activities requiring earth moving, such as grading, trenching for utilities, excavation for foundations, and installation of support structures where native soil would be disturbed. Based on the ground disturbance necessary to complete the project components, there is a limited potential for adverse impacts to scientifically significant paleontological resources from moderate sensitivity (PFYC 3). Ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources (Santa Clara 2010). As a project design feature, the project will implement a Worker Environmental Awareness Training Program **(APM GEO-2)**, which will provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction.

APM GEO-2 would not reduce construction impacts to a less-than-significant level because it does not fully address what needs to happen once an individual identified a paleontological resource during construction. It does not specifically state how the project applicant will identify a qualified paleontologist, and it does not provide detailed procedures for collection and preservation of significant paleontological resources identified during construction. **Mitigation Measure (MM) GEO-1**, which supplements **APM GEO-2**, includes additional requirements regarding identification of a qualified paleontologist and guidelines for the collection and preservation of any significant paleontological resources identified during construction.

Implementation of **APM GEO-2** and **MM GEO-1**, discussed below and agreed to by the project applicant (citation needed). would ensure that staff working at the site would contact the appropriate technical expert, who would then be able to determine the significance of the paleontological resource, and properly salvage that resource. Therefore, the project's impact would be less than significant.

> **MM GEO-1**: If a fossil is found and determined by the approved paleontologist to be significant and avoidance is not feasible, the qualified paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be

prepared that outlines the results of the mitigation program. The City shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

Operation and Maintenance

NO IMPACT. There is no potential to disturb paleontological resources during operations because there would be no earth-moving activities required for operations. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary, small and most likely limited to disturbance of fill. There would be no impact to paleontological resources.

Required Mitigation Measures: MM GEO-1.

5.7.3 References

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